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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,553	11/19/2003	Katsuji Mukaihara	N0029.1649	5051
32172	7590	09/19/2006	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP 1177 AVENUE OF THE AMERICAS (6TH AVENUE) 41 ST FL. NEW YORK, NY 10036-2714			NGUYEN, TUAN N	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/715,553	Applicant(s) MUKAIHARA ET AL.	
	Examiner Tuan N. Nguyen	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 9 and 10-14, 17, 18 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

2. The following is a quotation of 35 U.S.C. 102(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-3, 10-12 are rejected under 35 U.S.C. 102(a) as being unpatentable over Applicant's Figure 1: PRIOR ART (US 2004/0101004).

With respect to claims 1, 10 (*FIG 1: Prior Art*) shows and discloses a diode-pumped solid-state laser rod *Sections [0005-0008]*, wherein: device used side-pump a cooling tube (Fig 1: 3 cooling tube) to cool said laser rod with the use flowing water is provided coaxially so as to surround said laser rod (*Fig 1: 1, 6 cooling water surround and cool laser rod*); and said cooling tube is provided with a antireflection area for pumping light on a portion of an outer surface thereof (*Fig 1: 17 antireflection area pumping on a portion of an outer surface*), and with a high reflection area for the pumping light on another portion of the outer surface of which said antireflection area is absent (*Fig 1: 15 high reflection mirror on another portion of an outer surface*), wherein the antireflection area is not a hole through the cooling tube (*Fig 1: 17 antireflection area pumping on a portion of an outer surface of cooling tube, where the antireflection area is not a hole through the cooling tube*). Since claim 10 recites the same or identical elements/limitations it is inherent to use (*Fig 1: Prior Art*) to recite the method of manufacturing side pump laser device, product by process.

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With respect to claims 2-3, 11-12 (*Fig 1: Prior Art*) shows a pumping laser diode is placed in such a manner so as to prevent an optical axis of the pumping light that passes through said antireflection area and goes incident on said laser rod from intersecting with a central axis of said laser rod (*Fig 1: Prior Art 2,13,16, 17 LED light focus and incident on laser rod*). The antireflection areas provided to a plurality of places along a circumferential direction of said outer surface (*Fig 1: 17s plurality antireflection areas along circumferential of outer surface*).

With respect to claims 4, 13 said antireflection area is provided to plurality of places at equal intervals along the circumferential direction (Col 5: 22-35)(Fig 2: 24, pumping light channels).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

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5. Claims 5, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig 1) (US 2004/0101004).

With respect to claims 5, 14 the claim further requires an antireflection area comprises an antireflection coating, and the high reflection area comprises a high reflection coating. Applicant's Prior Art (Fig 1) [Section 0005-0006] discloses antireflection coating (Fig 1: 17), and diffusion reflector [section 0006](Fig 1: 15). It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art, in this case is the diffusion reflector is high reflection area to reflect the laser back into the core for absorption, provides similar functional limitation. *In re Aller*, 105 USPQ 233.

6. Claims 8, 9, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig 1) (US 2004/0101004) in view of Takase (US 6,282,217).

With respect to claims 8, 9 the claims further require *wherein the cooling tube having a scattering surface on an inner surface*. Applicant's Prior Art (Fig 1) discloses the above without discretely disclose the scattering surface on an inner surface. Takase '217 shows a solid state laser rod cool with medium flow *having the cooling tube having a scattering surface on an inner surface (Fig 2: 23 scattering surface on an inner surface of cooling tube)(Fig 6, 7, 8: 23B)*. It would have been obvious to one of ordinary skill in the art to provide Prior Art with the scattering surface on an inner surface of cooling tube as taught or suggested by Takase '217, for the benefit of to uniform pumping the laser rod (Col 1: 35-40).

With respect to claims 17, 18, the claims further require *wherein a scattering surface is provided on an outer surface of said high reflection area*. Applicant's Prior Art (Fig 1) discloses the above without discretely disclose the scattering surface on an outer surface of high reflection area. Takase ' 217 shows a solid state laser rod cool with medium flow *having a scattering surface is provided on an outer surface of said high reflection area (Fig 1: 3 scattering surface on an outer surface of said high reflection area)(Fig 3: 23)(Fig 5: 23A)*. It would have been obvious to one of ordinary skill in the art to provide Prior Art with the scattering surface on an outer surface of said high reflection area or the cooling tube as taught or suggested by Takase '217, for the benefit of to uniform pumping the laser rod (Col 1: 35-40).

Allowable Subject Matter

6. Claims 6-7, 15-16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references of the record fail to teach or suggest the laser device and the method of manufacturing thereof:

Claims 6, 15:

A solid-state side pump laser comprising water cooling tube having an antireflection area on a portion of an outer surface, and a pumping laser is pumping light through a plurality antireflection areas and intersecting with the laser rod, *wherein the high reflection coating is covered with an antireflection coating*.

Claims 7, 16:

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wherein the antireflection area includes antireflection coating alone, and the high reflection area includes high reflection coating and said antireflection coating.

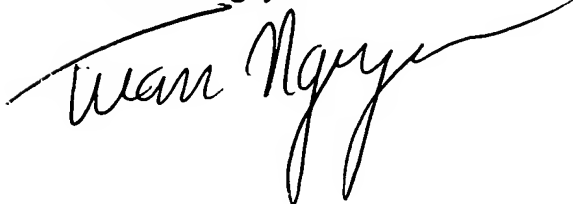
Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harvey Minsun can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read 'Tuan Nguyen', with a long horizontal flourish extending to the right.A handwritten signature in black ink, appearing to read 'Harvey Minsun', with a long horizontal flourish extending to the right. Below the signature is a rectangular stamp that reads 'HARVEY MINSUN'.